THE SIMPSON DESERT EXPEDITION, 1939
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[The only surface waters met with by the Expedition other than the very temporary and shallow water of claypans, was in waterholes in the Coglin Creek and Charlotte Waters, Northern Territory, and in the Diamantina River. Even the Coglin Creek waterholes may be quite dry for long periods, but they contained clear shallow water in May, 1939, when small fish could be seen and six specimens were netted by Mr. H. O. Fletcher. No attempt was made to take fish in the Diamantina except at Andrewilla Waterhole in South Australia, 45 miles below Birdsville, and at its end near Lake Eyre. Hand lines were used at both places. Andrewilla is a large permanent hole, and several perch were caught there up to half-a-pound in weight. The water was white with suspended clay and the fish were of a curious paleness, a sort of opalescent white. However, as they were good eating and it was thought they would prove to be a well-known species, only the smallest was put into the spirit bottle. The water at the mouth of the river was slightly brackish, and there were no bites on the hand lines. Although the Diamantina runs a channel flood every year, only certain waterholes are permanent. —C. T. Madigan.]

I am grateful to Dr. C. T. Madigan for the privilege of writing this report on the fishes taken by the Simpson Desert Expedition. These comprise seven small specimens referable to three species, two in the family Terapontidae and one in the Chandidae.

Fam. TERAPONTIDAE

The local species of *Terapon* have been reviewed by Ogilby and McCulloch (1916) in Memoirs of the Queensland Museum, 1916, **5**, 99-126. The Australian forms were again listed in Mem. Aust. Mus., 1929, **5**, 159-164. Since then Fowler has dealt with numerous species in Bull. 100, U.S. Nat. Mus., 1931, **11**, 325-358. In the same year, Weber and de Beaufort (Fish Indo-Austr. Archip., 1931, **6**, 139-159), monographed the East Indian species. Some new genera were named in Austr. Zool., 1943, **10**, 180-184, and a few new species have been described from newly explored regions.

Two species, both known to science, were collected by the Simpson Desert Expedition, one now referable to *Hephaestus* De Vis, whilst the other requires a new genus, which may be defined as follows.

Genus **Madigania** nov.

Orthotype, *Therapon unicolor* Günther 1859.

Mouth large, reaching below middle of the small eye. Teeth villiform on jaws, outer ones enlarged; palate toothless. Preorbital entire or with a few denticles. Lower opercular spine not reaching gill-opening. Body elongate-elliptical. Supracleithrum not exposed, hidden by scales. Less than 60 rows of lateral scales: 8 or 9 between l. lat. and spinous dorsal. Normally 12 dorsal spines. General characters as for the family Terapontidae. Colouration greyish, usually with small scattered dark spots. No dark blotch on spinous dorsal, no stripes on body. Caudal fin plain. Freshwater, tropical and subtropical Australia.

Differs from the true marine *Terapon*, in having long, low, first dorsal fin, without dark blotch; body not silvery with stripes, lower opercular spine much shorter, and caudal fin emarginate.

Named in honour of Dr. Cecil Madigan, leader of the Expedition.

MADIGANIA UNICOLOR (Günther 1859)

Therapon unicolor Günther 1859, Cat. Fish. Brit. Mus., **1**, 277 (Gwydir River, N.S.W., and Mosquito Creek, Darling Downs, Qld.; types in British Museum); Ogilby and McCulloch, 1916, Mem. Qld. Mus., **5**, 101, 109, pl. xi, fig. 1 (detailed description, references and synonymy); Rendahl, 1921, K. Svenska Vet. Handl., **61**, 9 (Noonkambah, Kimberley District, North-West Australia), and 1922, Medd. Zool. Mus., Kristiania, **5**, 166 and 185 (Port Darwin and Daly River, North-West Australia); Paradice and Whitley, 1927, Mem. Qld. Mus., **9**, 88 (Howard River, Northern Territory); Hamlyn-Harris, Proc. Roy. Soc. Qld., **41**, 1929, 34 (north of Mary River, Qld.); Fowler, 1931, Bull. U.S. Nat. Mus. 100, **11**, 355 (Bourke, N.S.W.); Marshall and Preston, 1934, 30th Ann. Rept. Amat. Fisherm. Assoc., Qld., 4 (Mary River, Qld.); Fletcher, 1937, Aust. Mus. Mag., **6**, (5), 164 (Waroona Creek, Qld.); Toronese, 1939, Bull. Mus. Torino, **47**, 187, 300 ("Melhourne," *i.e.*, from National Museum there).

Therapon maculosus Saville-Kent 1893, Great Barrier Reef, 369, *nom. nud.*, Queensland.

Therapon (*Mesopristes*) *unicolor* Fowler, 1928, Mem. Bishop. Mus., **10**, 211.

Leiopotherapon unicolor Barrett, 1933, Water Life, 13.

This species has been so fully dealt with by Ogilby and McCulloch that it only remains to add references to records in recent literature and to list localities at which it has been taken.

The Simpson Desert Expedition obtained five examples, 27·5 to 77 mm. in standard length at Coglin Creek, Charlotte Waters, Northern Territory. Abundant, swimming swiftly in small creeks.

Collector's No. 501; Aust. Mus. Reg. Nos. IB. 22 to 26.

Apart from the material collected by the Simpson Desert Expedition, the Australian Museum has many specimens of *Madigania unicolor*, up to 9½ inches long, from the following localities:—

Western Australia: King Sound (J. Cairn); Paterson Ranges, Kimberley District (H. Basedow); Gascoyne River and Kimberley (W. Aust. Museum); Murgoo, north-west-north of Yalgoo, northern goldfields railway line, "Many thousands of these fish were found alive scattered over a large area of country after a very heavy north-west storm had passed over. The fish appeared to have come down with the rain. There is no known water here" (Gibson, 1925, MS.).

Northern Territory: Inland from Port Darwin (Wm. Butcher); Howard River, 35 miles east of Darwin (W. E. J. Paradice); Red Bank Creek, Macdonnell Ranges, Indracowra, Central Australia (W. Horn).

Queensland: Winton (Qld. Museum); Flinders River and adjacent pools near Hughenden and Richmond (F. L. Berney); Hughenden district (G. C. Currie); Split Rock, Waroora Creek, 30 miles from Camooweal (H. O. Fletcher and W. Barnes); Lake Barrine, Atherton Tableland (G. Curry); Almaden (W. D. Campbell); Gayndah (Old Coll.); Billabongs of the Diamantina River (S. W. Jackson); Burdekin River; Lillesmere Lagoons (A. Morton); Rockhampton (Nobbs); Eidsvold, Burnett River (T. L. Bancroft). New record size 9½ inches.

New South Wales—Barwon River and Tarrion Creek, Brewarrina, Aug. 1910 (D. G. Stead); Bourke (Cairn, Grant and Shaw); Moree (Barnes and Lucas); Warrah Creek, Willowtree, near Quirindi; Liverpool Plains (G. Fairbairn), southernmost record; Walgett (artesian water, hospital grounds, May 1910, D. G. Stead); Wirrabilla Station, Collarenebri (D. G. Stead); Weil-

moringle Bore, from drains, July 1908 (D. G. Stead); Beringaga (D. G. Stead); Corella Bore, (a "pop-eyed" specimen from D. G. Stead).

This range agrees with that given by Ogilby and McCulloch for the species. The wide distribution may be attributed to the hardihood of the fish, its ability to aestivate out of water, and, perhaps, such fortuitous agents as rain, rare floods, carriage of eggs by waterfowl, etc. Essentially it inhabits the Leichhardtian fluvifaunula.

Genus Hephaestus De Vis

Hephaestus welchi (McCulloch and Waite 1917)

Therapon welchi McCulloch and Waite, 1917, Trans. Roy Soc. S. Aust., **41**, 472, fig. 1 (Cooper Creek, near Innamincka, Central Australia); Waite, 1921, Rec. S. Aust. Mus., **2**, (1), 97; 1923, Waite, Fish. S. Aust., 117 and 119.

The single specimen has, unfortunately, been damaged during camel transport, so that the snout is crushed, the caudal fin broken off, and some fin-rays and scales abraded.

D. xii, 12; A. iii, 9; P. 17; V. i, 5; C ?.

Sixty rows of scales below the lateral line between its origin and the hypural joint, and 64 above it. Ten to 13 scales between lateral line and spinous dorsal fin. Cheek scales in five to seven rows.

Depth (44 mm.) 3, head (39) nearly 3·5 in length to hypural joint (136). Eye (7) 5·5 in head, 3 in postorbital (21), and a little less than snout. Interorbital width (11·5) nearly 3·4 in head.

Longest (fifth) dorsal spine (19) and second anal spine (20) about half length of head.

General characters as described by McCulloch and Waite. Maxillary reaching at least to below hinder nostril or to anterior half of eye, its posterior margin obliquely truncate and exposed. Eye slightly shorter than snout (damaged), which may be shorter than interorbital width, otherwise the head and dentition appear typical. Supracleithrum and cleithrum exposed, weakly denticulate. Lower opercular spine barely reaching opercular margin. Dorsal spines heteracanth, the fifth longest. Second anal spine longer and stronger than the third. The anal and pectoral rays are broken. Ventrals inserted *behind* the vertical of first dorsal spine and reaching half its distance to the anal fin.

Colour, in alcohol, greyish to brownish on back, silvery on sides with dark margins on scales. Fin-membranes and root of tail dusky grey, fin-spines olive-greenish. Groups of scattered chromatophores under each scale on sides give, from a distance, an appearance of wavy stripes along scale-rows. No dark blotches on fins.

Described from a specimen 136 mm. in standard length, originally probably about $6\frac{1}{2}$ inches overall.

Loc.—Andrewilla Waterhole, South Australia, 45 miles south of Birdsville. Camp No. 28. One of several specimens observed at the time (Sturtian fluvifaunula). Collector's No. 637, Aust. Mus. Reg. No. IB. 21. New to the Australian Museum collection because this species was hitherto known only from the type, over eight inches long, caught with hook and line in Cooper Creek near Innamincka in 1916, close to the spot where Burke was buried, and preserved in the South Australian Museum, Adelaide.

Dr. Madigan's specimen differs in the proportions of the eye (and its surrounding parts) to the head and in having the ventral fins farther back, but I think these differences are accounted for by heterogonic variation.

Fam. CHANDIDAE

Small, almost transparent perch-like fishes, found commonly in shoals in fresh and salt water, with compressed bodies covered with large cycloid scales. Ventral fins usually without tapering axillary scale. Frontals with muciferous channels. Preoperculum with a double ridge, the lower limb of which is serrated. Mouth small, no supplemental bone on maxillary. Body compressed, not very deep. Lateral line practically obsolete, only a few scales bearing tubes. Dorsal and anal spines not very strong. About eight dorsal and anal rays.

Blandowskiella castelnaui (Macleay 1881)

Pseudoambassis castelnaui Macleay 3 Feb. 1881, Proc. Linn. Soc. N.S.W., **5**, 339; Macleay 1881, Cat. Aust. Fish., **1**, 39. Murrumbidgee River, N.S.W.
Chanda castelnaui Waite, 1904, Mem. N.S.W. Nat. Club, **1**, 29.
Ambassis castelnaui McCulloch, 1921, Aust. Zool., **2**, (2), 55, and of check-lists.
Blandowskiella castelnaui Iredale and Whitley, 1932. Vict. Nat., **49**, 95; Whitley, 1935, Rec. S. Aust. Mus., **5**, (3), 361, fig. 9 (Narrandera specimen figured).

The Simpson Desert Expedition obtained one small specimen, 20 mm. in standard length, with the following characters:

D. viii/i, 8; A. iii, 8. Most of the scales are missing but there are apparently 25 along the sides, only the anterior few bearing lateral line tubes. L. tr. *circa* 12.

Eye (2·4 mm.) about 3, snout (1·5) about 4 in head (7·5).

Depth (7) and head about one-third standard length.

Supraorbital raised into a point (hardly a spine) posteriorly.

Agrees well with my figure of a New South Wales specimen, but is a little deeper between soft dorsal and anal fins and has slightly shorter snout. Straw-yellowish with punctae on back and fins. Membranes between first two dorsal spines punctulate. A dark streak along middle of caudal peduncle.

Loc.—Coglin Creek, Charlotte Waters, Northern Territory. Collector's No. 501, pt. Aust. Mus. Reg. No. I.B. 27.

This species grows to a length of $3\frac{1}{4}$ inches and inhabits the Mitchellian fluvifaunula. This is the first record of this species from South Australia and the Northern Territory.

Fifty-seven specimens of *Blandowskiella castelnaui* are in the Australian Museum from:

New South Wales—North Yanco, Narrandera, N.S.W., January 1910 (D. G. Stead); tributaries of the Lachlan River, Goulburn, N.S.W. (A. C. Gibson); Wirrabilla Station, Collarenebri (D. G. Stead); Colombo Creek, Riverina, March 1910 (D. G. Stead); junction of the Barwon and Namoi Rivers, May 1910 (D. G. Stead).

South Australia—Hart's Island, Murray River, May 1903 (D. G. Stead). "Easily observed when water is clear. Very abundant, keep low, near bottom (Stewart)."

The Simpson Desert Expedition material is of interest because it includes, in its Sturtian region, *Madigania,* which, though essentially Leichhardtian, is widely distributed through several northern fluvifaunulae, *Hephaestus* (*welchi*), which is Sturtian with Jardinean affinities, and *Blandowskiella,* which is Mitchellian. (See Iredale and Whitley, 1938, S. Aust. Naturalist, **18**, 64-68.)